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In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-31 (Cancelled)

32. (Currently amended) A method of immobilization of a mediator molecule on an implant material comprising:

covalently binding an anchor molecule to a chemically activated surface of the implant material, wherein the anchor molecule has a functional group having sufficient reactivity to allow covalent binding of a chemical compound;

covalently immobilizing a mediator molecule on the implant material using the functional group;

wherein the mediator molecule comprises a biomolecule that (a) reduces rejection of the implant material, (b) promotes growing-in of the implant material, or (c) reduces rejection and promotes growing-in of the implant material; and

wherein said implant material comprises at least one component selected from the group consisting of a metal, a metallic alloy, and a ceramic material.

33. (Previously presented) The method according to claim 32 wherein the anchor molecule comprises an aminoalkylsilane molecule.

34. (Previously presented) The method according to claim 32 wherein the chemically activated surface of the implant material is provided with an oxide layer prior to covalent binding of the anchor molecule.

35. (Currently amended) A method of immobilization of a mediator molecule on an implant material comprising:

covalently binding an anchor molecule to a chemically activated surface of the implant material, wherein the anchor molecule has a functional group having sufficient reactivity to allow covalent binding of a chemical compound;

covalently immobilizing a mediator molecule on the implant material using the functional group; wherein the mediator molecule is a biomolecule selected from the group consisting of a BMP protein, a ubiquitin, and an antibiotic.

36. (Previously presented) The method according to claim 35 wherein the bone growth factor is BMP-2 or BMP-7.

37. (Previously presented) The method according to claim 35 wherein the implant material comprises at least one component selected from the group consisting of a metal, a metallic alloy, and a ceramic material.

38. (Currently amended) A method of immobilization of a mediator molecule on an implant material, comprising:

covalently binding an anchor molecule to a chemically activated surface of the implant material, wherein the anchor molecule has a functional group having sufficient reactivity to allow covalent binding of a chemical compound;

binding a spacer molecule to the anchor molecule, wherein the spacer molecule has an additional functional group having sufficient reactivity for covalent binding of the mediator molecule;

covalently immobilizing a mediator molecule on the implant material using the additional functional group;

wherein the mediator molecule comprises a biomolecule that at least one of (a) reduces rejection of the implant material, and (b) promotes growing-in of the implant material; and

wherein said implant material comprises at least one component selected from the group consisting of a metal, a metallic alloy, and a ceramic material.

39. (Previously presented) The method according to claim 38 wherein the spacer molecule reduces nonspecific absorption of the mediator molecule to the implant material.

40. (Previously presented) The method according to claim 39 wherein the spacer molecule comprises an agarose molecule.

41. (Previously presented) An implant with a mediator molecule immobilized thereon produced by the method of claim 32.

42. (Currently amended) The implant according to claim 41 wherein the metal ~~component~~ of the implant material comprises titanium, aluminum, or stainless steel, wherein the metallic alloy ~~component~~ of the implant material comprises titanium, and wherein the ceramic ~~component~~ of the implant material comprises hydroxyapatite.

43. (Previously presented) An implant with a mediator molecule immobilized thereon produced by the method of claim 35.

44. (Currently amended) The implant according to claim 43 wherein the implant material is selected from the group consisting of metal, metallic alloy, or ceramic wherein the metal implant material comprises titanium, aluminum, or stainless steel, wherein the metallic

alloy implant material comprises titanium, and wherein the ceramic implant material comprises hydroxyapatite.

45. (Previously presented) The method according to claim 35 wherein the biomolecule is BMP protein.

46. (Previously presented) The method according to claim 35 wherein the biomolecule is ubiquitin.